



City and County of Kingston upon Hull

Annual Report

of the

City Analyst

for the year

1966

R. T. HUNTER, B.Sc., F.R.I.C.

Public Analyst and Corporation Bacteriologist



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1966-67

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CITY LABORATORIES

1966

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PUBLIC ANALYST, CORPORATION CHEMIST AND BACTERIOLOGIST,
 OFFICIAL AGRICULTURAL ANALYST AND PORT ANALYST,
 PUBLIC ANALYST FOR THE COUNTY OF YORK, EAST RIDING,
 PUBLIC ANALYST FOR THE HALTEMPRICE URBAN DISTRICT COUNCIL

R. T. HUNTER, B.Sc., F.R.I.C.

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Assistant Chemists:

B. M. HILL, B.Sc., A.R.I.C.

D. DUNN, A.R.I.C.

E. M. SMALES

I. R. MILNER, G.R.I.C. (Commenced 11/7/66)

M. A. GOUGH

Laboratory Assistant:

P. D. WARD (Resigned 30/4/66)

M. H. DEER (Commenced 6/6/66)

Clerk:

R. H. COOPER (Resigned 30/6/66)

G. R. WARD (Commenced 25/7/66)

Laboratory Attendants:

Miss O. WRIGHT

Miss D. WRIGHT

THE CITY LABORATORIES,
184 HIGH STREET,
KINGSTON UPON HULL

To the Members of the City Council of Kingston upon Hull.

My Lord Mayor, Ladies and Gentlemen,

I have the honour to present my fifth Annual Report which deals with the work carried out in the City Laboratories during 1966.

The total number of samples examined was 10,583 as compared with 10,513 in 1965, of which 4,571 were submitted under the Food and Drugs Act as compared with 4,830. The percentage of unsatisfactory food and drug samples procured in the City (excluding poor quality milks) was 4.1 per cent.

Milk and Meat products are the articles which have again proved the most unsatisfactory. Despite the considerable effort extending over many years directed to the problem, extraneous water is still found in milk. In the last 2 years, in this area, a considerable drop in the amount of milk containing penicillin has occurred. Legislation is expected in the near future on the labelling and composition of Meat Products. It is unlikely that this will produce an improvement in the overall quality of meat products but it should eliminate the very poor products. Testing of foods for pesticide residues is now well established and to be regarded as one of the routine duties. A start has been made on the testing of the more modern drugs.

All the members of the staff have rendered able and willing service during the year and I have pleasure in acknowledging their zealous work. I would also like to thank the Members of the Cleansing and Sanitary Committee and the Health Committee for their continued interest and support.

Your obedient Servant,

R. T. HUNTER,

Public Analyst

CLASSIFICATION OF SAMPLES

During the year the number of samples of all kinds examined was 10,583 made up as shown below.

Kingston upon Hull—

Food and Drug Act:

Milk	2292	
Other Foods and Drugs	1328	
	—	3620

Bacteriological

Designated Milks	312	
Ice Cream	85	
Swimming and Footbath Waters	103	
	—	500

Fertilisers and Feeding Stuffs 54

Atmospheric Pollution 3373

Miscellaneous (Other Corporation Depts.) 501

—	3928
—	8048

Hull and Goole Port Health Authority—

<i>Food and Drugs Act</i>	226	
<i>Ship's Drinking Waters</i>	57	
	—	283

East Riding of Yorkshire County Council—

<i>Food and Drugs Act</i>	569
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Haltemprice Urban District Council—

<i>Food and Drugs Act</i>	156
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Miscellaneous—Other Sources— 1527

10,583

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Official Regulations, Reports, Etc.

Several Statutory Regulations which affect the work, of the Public Analyst were published in the year under review. They were:—

1. The Cheese Regulations 1965 (1/2/67) (1/2/70) and the Cheese (Amendment) Regulations 1966 (1/2/67).
2. The Skimmed Milk with Non-Milk Fat (Amendment) Regulations 1966.
3. The Salad Cream Regulations 1966
4. The Mineral Hydrocarbons in Food Regulations 1966
5. The Butter Regulations 1966 (1/9/67)
6. The Colouring Matter in Food Regulations 1966 (26/6/67) (1/1/68)
7. The Antioxidant in Food Regulations 1966

The dates in parenthesis indicate when the regulations will come into operation. Where two dates are given the regulations will come into force in sections OR with a transitional arrangement. With the exception of the Cheese Regulations, which are new, all the other Regulations are modifications or extensions of present Regulations.

1. The Cheese Regulations 1965 and the Cheese Amendment Regulations 1966.

Regulations to control the composition and description of the various types of cheese sold in this country have been under discussion for at least 40 years. The 1965 Regulations, due to come into operation in February 1967, resolve some of the older problems as well as some of more recent origin.

The three main ingredients—water, fat and protein—are the same in all cheeses. Though there are a large number of different varieties of cheese on the market they can be classified fairly readily into two groups—HARD and SOFT. A cheese will be HARD if it has a low water and fat content and conversely, SOFT, if it has a high water and/or fat content.

The regulations contain a list of HARD CHEESES, including the common British and some foreign varieties. Minimum fat and maximum water contents are specified. Non listed HARD CHEESES must bear an indication of the minimum amount of fat present. A choice of methods of doing this is given.

PROCESSED Cheese is produced by blending natural cheese, water and emulsifying salts then pasteurising the mixture to obtain an end product which has sufficient fluidity for convenient packaging (usually in metal foil) and which possesses long keeping qualities. It is an outlet for lower quality cheese. To comply with the Regulations PROCESSED cheeses must bear an indication of the minimum amount of fat present (a choice of methods is available) OR in the case of the listed cheeses, they may, alternatively, be of or above the minimum quality of the unprocessed cheese.

A HARD Cheese from which some or all the fat is removed (this can be done indirectly by starting off with skimmed or partially skimmed milk) shows a pro rata increase in protein and it is debatable whether or not it is to be regarded as an inferior product. In this country it has tended to be regarded as such and all the common English varieties of Hard cheese are made from milk containing its full complement of fat. Some varieties of hard cheese highly esteemed abroad (and also in this country) e.g. Parmesan, Gruyere are prepared from partially skimmed milk. In the case of SOFT CHEESES less fat is not compensated for by more protein but by more water, and there is no doubt that a low fat soft cheese is nutritionally inferior to a high fat. It would appear essential therefore that a purchaser should be told if a cheese is soft because of high water or because of high fat content.

Variation of the fat/water ratio produces an almost unlimited number of products of intermediate quality. The regulations specify the composition of 10 types of SOFT cheese varying from DOUBLE CREAM CHEESE which must contain at least 65% of fat down to SKIMMED WHEY CHEESE which may contain a large amount of water and no (or very little) fat. The most important types mentioned are the so called CHEESE SPREADS and CREAM CHEESE. A whole range of cheeses often described as COTTAGE or CURD are included.

The Regulations list the ingredients that may be used in the preparation of cheese, processed cheese and cheese spread. Further, a list of ingredients present must be given with CHEESE SPREAD packed ready for sale.

The introduction of various labelling provisions is postponed until

1970. The regulations in their present form offer little, if any, control over the composition of the cheese in composite articles.

2. The Skimmed Milk with Non-Milk Fat Amendment (Regulations) 1966.

The food “ S.M.A.,” when sold in liquid form is exempt from the need to declare “ Unfit for babies ” on the label.

3. The Salad Cream Regulations 1966

The compositional requirements regulating the amount of vegetable oil and egg yolk solids in Salad Cream contained in the 1945 Order are confirmed. The purpose of these regulations is to produce a more satisfactory method of labelling products similar to what is commonly known as Salad Cream.

4. The Mineral Hydrocarbons in Food Regulations 1966.

These Regulations re-enact with amendments regulations made as recently as 1964. The changes are (i) amended specifications with which the mineral hydrocarbons used must comply, (ii) a new test to demonstrate the absence of polycyclic hydrocarbons from solid mineral hydrocarbons used in things like chewing gum, (iii) mineral hydrocarbons are now only permitted in cheese rind. Formerly they were permitted in cheese if their presence was due to their use on the rind.

5. The Butter Regulations 1966

For many years control of the composition of butter has been based on “ definition ” and a maximum water content specification. The new regulations include in addition specifications for milk fat (a minimum) and milk solids other than fat (a maximum). “ Salted butter ” may contain slightly less fat than “ butter ” if the reduction is consequent upon the addition of salt and the product is clearly labelled.

6. The Colouring Matter in Food Regulations 1966

These regulations replace those of the same title made in 1957. They show no fundamental change in approach to the problem and are perhaps best regarded as a modernised version.

Tea (leaf or essence), coffee bean, ground coffee, coffee essence, white bread, soda bread, cream, condensed milk and dried milk are added to the list of foods which may NOT contain added colouring

matter. Also the addition of colour to bread (other than the two types mentioned previously), butter and cheese is restricted.

The new regulations contain a prohibition on six coal tar colours permitted in the old. One new coal tar colour is allowed. Specifications of purity are laid down for each colour whenever these have been formulated. Diluents, solvents etc. also must, at least in part, comply with these.

The advertising and labelling requirements for colouring matters are revised.

7. The Antioxidant in Food Regulations 1966

These regulations replace those of the same title made in 1958. There are four principal changes (i) Antioxidants are prohibited in foods for babies and young children, (ii) ethoxyquin becomes an additional permitted antioxidant, up to three parts per million being allowed on apples and pears, (iii) antioxidant may be added to high potency Vitamin A preparations, and (iv) specifications for the permitted antioxidants have been laid down.

New or amending regulations, proposed in 1965 for Canned Meat, Meat Pies, Sausages, Coffee and Mixtures, Margarine and Ice Cream have not yet been made.

Broadly speaking, in recent years, the introduction of new or revised Food Standard Regulations has been a three stage process. The stages are marked by, first, a Food Standards Committee Report, next, proposals from the Ministry of Food and finally the regulations themselves.

During 1966 proposed Regulations were published for Spreadable Fish and Meat Products and Solvents.

During the year two reports of interest were published by the Food Additives and Contaminants Committee and one by the Food Standards Committee. Both Committees advise the Ministers of Food etc. and Health. They considered and made recommendations on the following topics:—

1. Solvents used in Food
2. The use of Cyclamates in Food
3. Claims and Misleading descriptions, as applied to Food

1. Solvents used in Food

The FOOD ADDITIVES AND CONTAMINANTS COMMITTEE did not concern themselves with the solvents that are used in extraction processes nor the amounts that may be found in food due to their use. They recommend a definition which excludes natural food substances e.g. water and liquids added primarily as flavouring agents. The exclusion of acetic and lactic acids and propellants is also recommended.

The main uses of solvents in the food industry are (i) as vehicles for the incorporation into food of small quantities of other additives, (ii) for dissolution of raw materials, and (iii) dilution of concentrated substances. Frequently, the solvent remains in the food and is consumed. Generally the amounts are small. The prime consideration of this report is to ensure that no toxic hazard arises.

The Committee recommend that the use of only eight solvents should be permitted, that these should comply with purity specifications and also, when on sale that they should be appropriately labelled.

In reviewing the list of solvents said either to be used or likely to be used in the U.K. comment was made on the unsatisfactory toxicity data. Further, it was concluded that since the use of solvents is self limiting there was no need to lay down a statutory limit for the maximum amount to be permitted in a food.

2. The Use of Cyclamates in Food

Cyclamates are artificial sweetening materials, much less sweet than saccharin but without its "after taste." They are about thirty times sweeter than sugar and may be preferable to it in the treatment of obesity and diabetic conditions.

Their present legal position is anomalous in that the Artificial Sweeteners in Food Order 1953, prohibits their presence in ALL foods while at the same time the Soft Drink Regulations 1964, permit their use in Soft Drinks.

The Food Additives and Contaminants Committee recommend that the use of cyclamates be permitted in foods without statutory limitation except for those already in operation with regard to Soft Drinks and Ice Cream.

The Committee were impressed by the extent of the information available to support the view that cyclamates are safe to use in food. If consumed in amounts appreciably higher than those likely to be found in food they have a laxative effect

3. Claims and Misleading Descriptions

This report is the second half of a two part report by the Food Standards Committee on Food Labelling. (The first half was reviewed in the Annual Report for 1964 p. 9.) The following is a brief summary of what are regarded as the more important views expressed.

Legislation at present in force must remain the basis of all control of claims and misleading descriptions. It does, however, need the support of more specific provisions in two directions.

1. To clarify doubtful cases.
2. To ensure that the consumer is given adequate information in respect of claims affecting health.

The supports that are required could only be provided by regulations, though these could usefully be supplemented by Codes of Practice.

1. DOUBTFUL CASES

The report makes a somewhat artificial distinction between CLAIMS and DESCRIPTIONS. Regarding claims (doubtful cases) it is considered that adequate protection for the consumer is already provided.

Eleven pages of the report are given to discussing and making recommendations on certain descriptions and related material. The following is a list.

Pictorial devices	Dried foods (exc. Instant coffee)
Designatory phrases	Dry (cake, sauce etc. exc. soup)
Adjectives	Mixes.
'Fresh'	Meat Products
'Natural'	(i) steak, cutlet, chop, fillet.
'Pure'	(ii) diminutives of accepted names
'Home-Made'	(iii) burgers
'Made of' & 'Made from'	(iv) meat or/& poultry fritters
Foreign words and standards	Fish fingers or sticks
Butter	Vinegars
Cream, creamed (exc. soup)	Liqueur chocolates
Digestive	Shandy
	Mustard & Cress

2. CLAIMS AFFECTING ILL HEALTH

These claims are of greater importance and are more likely to mislead the consumer. Some are at present subject to control.

With the exception of three classes of claim, present legislation is thought to be adequate.

Seventeen pages of the report are given to explaining, discussing and making recommendations on the above mentioned three classes of claim, which are:

- (a) Claims relating to foods as sources of energy, vitamins or minerals.
- (b) Those relating to obesity, diabetes, and other diseases.
- (c) Claims made for foods as restorative during and after illness and as tonics.

It is recommended that any legislation introduced should include the following general provisions.

- (i) The virtue claimed for a food should be wholly contributed by that food and not partly by other foods with which it may be consumed.
- (ii) False comparisons should not be permitted
- (iii) The claim should be justifiable on the basis of the composition of the food AND also the quantity normally consumed in a day, i.e. daily likely intake.

The report then goes on to consider each class in turn and make a series of highly specific recommendations. The following mentions most of the recommendations.

Class (a) Claims relating to foods as sources of energy, vitamins or minerals.

Requirements are specified when a food is claimed to be a SOURCE OF ENERGY or a SOURCE OF PROTEIN. Dietary FAT must **not** be claimed to affect Heart Disease.

A new method (Vitamin D must retain old also) of stating Vitamin content is required.

Claims as to the presence of vitamins are divided into three grades dependent upon the amount present and the requirements must apply to the vitamins taken separately. A list of undesirable claims is given.

Folic Acid is now to be regarded as a vitamin. The exemptions, regarding declaration of content, previously given to fruit and vegetables, liquid cow's milk, shell eggs, fish, a meal in a catering establishment and butter are withdrawn.

Class (b) Claims relating to obesity, diabetes and other diseases.

The majority of overweight individuals are unlikely to derive lasting benefit from any of the foods claimed to have slimming properties. However, these foods may have two useful purposes—(i) they may help in sustaining a resolution to keep to an unsatisfying diet, (ii) they may assist weight conscious people (not obese) to remain slim. Tentative proposals are made and it is suggested that derived regulations should be reviewed after five years.

No claim should be made that a food is 'slimming' or has intrinsic weight reducing properties. However, claims in the context of it being or being part of a properly designed diet are permitted. When these are made the descriptions LOW CALORIE, CALORIE REDUCED, STARCH REDUCED, AERATED (where appropriate) are to appear on the label and in advertisements. Further, the foods must show a specific minimum reduction in fattening ingredients compared with the unmodified comparable food. (N.B. 'slimming' foods are usually modified ordinary foods). The labels are also required to specify the ingredients present and **usually** the calorie content.

It is regarded as extremely important that the risk of sufferers from diabetes being misled by claims or general labelling should be eliminated as far as possible. Recommendations are made to this effect.

Claims that foods have medicinal properties in conditions other than obesity or diabetes require comprehensive supporting data on the label.

Class (c) Tonic, Restorative, etc. claims.

It is recommended that TONIC claims should be prohibited, that RESTORATIVE claims can be used with certain high protein containing foods, and that for certain foods it should be permissible to describe them as USEFUL or SUITABLE for INVALIDS.

A TONIC is defined as something that will increase a recuperating individual's sense of well being.

A RESTORATIVE—something which accelerates recovery in active tissues of the body lost through illness or accident.

INVALID FOODS—foods useful in an invalid's diet because they stimulate appetite, are easily digested or present 'every day fare' in a way which is attractive to invalids.

Composition of Foods

Milks

(a) 1,410 samples were received for chemical analysis, their average composition being as follows:—

Kingston upon Hull							
	No.	Fat %	Non-fat Solids %				
1966	1225	3.80	8.73				
1961-65	6664	3.75	8.73				
1951-60		3.70	8.74				

East Riding C.C.				Haltemprice U.D.C.			
	No.	Fat %	Non-fat Solids %		No.	Fat %	Non-fat Solids %
1966	174	3.82	8.69	1966	11	4.15	8.87
1962-65	961	3.87	8.79	1964/5	35	3.66	8.98

(b) MILK—CHANNEL ISLANDS

For milk sold as Channel Islands, Jersey, Guernsey or South Devon there is an absolute standard of 4% by weight minimum milk-fat content as distinct from the presumptive 3% standard which applies to other types of milk. Also the vendor can make an extra charge for it.

96 samples were received for chemical analysis, their average composition being as follows:—

Kingston upon Hull							
	No.	Fat %	Non-fat solids %				
1966	69	4.98	9.17				
1962-65	219	4.74	9.09				

East Riding C.C.				Haltemprice U.D.C.			
	No.	Fat %	Non-fat Solids %		No.	Fat %	Non-fat Solids %
1966	24	4.62	9.02	1966	3	5.56	9.30
1962-65	184	4.78	9.09	1964-65	6	4.66	9.22

2 samples were found to contain extraneous water (see later).

6 samples were found to contain less than 4% of fat. They contained the following amounts 3.9% (ER 955), 3.8% (KH 676 and ER 966), 3.7% (KH 571), 3.65% (KH 565) and 3.0% (KH 835).

If sold at 10½d. per pint, Channel Islands milk of the average quality shown above (KH only) costs 1d. for 7.9 grammes of MILK SOLIDS.

(c) OTHER MILKS

1,314 samples were received for chemical analysis, their average composition being as follows:—

Kingston upon Hull							
		No.	Fat %			Non-fat Solids %	
1966		1156	3.73			8.70	
1962-65		5142	3.72			8.71	
East Riding C.C.				Haltemprice U.D.C.			
		No.	Fat %			No.	Fat %
			Non-fat Solids %				Non-fat Solids %
1966	150	3.70	8.64	1966	8	3.62	8.72
1962-65	777	3.65	8.72	1964-65	29	3.44	8.90

If sold at 9d. per pint, milk of the average quality shown above (KH only) costs 1d. for 8.1 grammes of MILK SOLIDS.

SUSPECT SAMPLES

In this country there is no definite standard of composition for liquid milk (other than that mentioned above under Milk—Channel Islands). In general, so long as it can be shown that it is as the cow produced it no offence is committed. A Government Committee in 1900 did not decide on definite standards but advised that milk containing less than 3% milk fat and/or 8.5% non-fat milk solids should be suspect. This idea is retained in the most recent Sale of Milk Regulations (1939).

A Government Committee in 1960 reported in favour of fixed minimum standards for milk-fat (3% within 5 years) and non-fat milk solids (8.5% within 10 years) for milk sold by retail. Results indicate that medium and large size dairies could comply with these standards fairly readily. Small dairies might find it difficult particularly at certain times of the year.

KINGSTON UPON HULL

The details are as follows:—

	No.	Total %	Deficient in Fat No. %	Deficient in N.F.S. No. %	Deficient in Both No. %
1966	250	21.6	64 5.5	208 18.0	22 1.9
1965	240	17.7	73 5.4	177 13.1	10 0.7
1964	328	27.1	89 7.4	273 22.6	34 2.8
1963	300	25.7	59 5.1	263 22.6	22 1.9
1962	331	23.4	88 6.2	275 19.5	32 2.3

(i) Samples containing less than 3% MILK-FAT and less than 8.5% NON-FAT MILK SOLIDS.

22 such samples were examined. Poor quality in 4 samples (Nos. 605, 1042A, 1043A and 1215) was mainly if not entirely due to the presence of extraneous water. 1 further sample—No. 426 also contained extraneous water. In the remaining 17 samples poor quality appeared to be due to natural causes.

(ii) Samples containing less than 3% MILK-FAT.

64 such samples were examined. 5 had a deficiency of less than 5%, 46 less than 15%; the largest deficiency recorded was approximately 32%.

(iii) Samples containing less than 8.5% NON-FAT MILK SOLIDS.

208 such samples were examined. 131 had a deficiency of less than 2.5%, 173 less than 5%; the largest deficiency recorded was 24%. 31 samples were found to contain extraneous water.

EAST RIDING C.C.

The details are as follows:—

	No.	Total %	Deficient in Fat No. %	Deficient in N.F.S. No. %	Deficient in Both No. %
1966	36	24.2	8 5.4	29 19.4	1 0.7
1965	23	12.2	12 6.3	17 9.0	6 3.2
1964	34	16.3	3 1.4	32 15.3	1 0.5
1963	19	9.5	8 4.0	13 6.5	2 1.0
1962	12	6.6	4 2.2	8 4.4	Nil —

(i) Samples containing less than 3% MILK-FAT and less than 8.5% NON-FAT MILK SOLIDS.

1 such sample was examined.

(ii) Samples containing less than 3% MILK-FAT

8 such samples were examined. 7 had a deficiency of less than 15%. The remaining sample was 20% deficient. 5 samples were from the same Dairy Company. Legal proceedings were instituted in respect of the 2 worst samples No. 1017A and 1203D—which were 13% deficient and fines totalling £10 were imposed.

(iii) Samples containing less than 8.5% NON-FAT MILK SOLIDS.

29 such samples were examined. 23 had a deficiency of less than 2.5%, 27 less than 5%; 3 samples were found to contain extraneous water.

HALTEMPRICE U.D.C.

Of the 8 samples of milk submitted for examination 1 (M1) was found to be 13% approximately deficient in MILK-FAT, and 1 (M9) was found to be 1.2% deficient in NON-FAT MILK SOLIDS.

SAMPLES CONTAINING EXTRANEOUS WATER

A non-fat milk solids content of less than 8.5% raises the presumption that a milk contains extraneous water. The Hortvet Freezing Point Test, developed in this country in the early 1930's is a very sensitive test indeed for the detection and determination of extraneous water and has since its inception been applied in this Department to milks containing less than 8.5% non-fat milk solids.

It has been my experience that milk sampled as it comes from the farm may occasionally have a non-fat milk solids content of greater than 8.5% and yet contain extraneous water. This year 4 such samples, excluding the Channel Islands Milks, were discovered.

KINGSTON UPON HULL

35 samples containing extraneous water were found during the year. 1 was of Channel Islands milk. 18 were discovered in the course of normal routine sampling and in general the amounts of water were small (less than 2%).

10.8% and 3.2% respectively were found in samples No. 585 and 586. A further 4 samples were found to contain from 5–20% of extraneous

eous water. The vendor was prosecuted, convicted and fined £20 with 10 guineas costs.

12% was found in sample No. 996. A further 13 samples were found to contain from 8–21% of extraneous water. The vendor was prosecuted, convicted and fined £36 with £11/11/9d. costs.

EAST RIDING C.C.

5 samples containing extraneous water were found during the year, all during the course of normal routine sampling. 1 was of Channel Islands Milk. In 4 samples the amount was less than 3%. Sample No. 1046A which contained at least 12% of extraneous water led to the prosecution of the vendor. A plea of not guilty on the grounds that the milk had not been for sale was, somewhat suprizingly accepted by the Magistrates.

Meat and Fish Products

328 of the samples examined are classified under the above heading. Appendix III gives a list indicating the wide range of products tested.

The samples were submitted by, as follows:—

Kingston upon Hull	210	(23)
East Riding County Council	73	(10)
Haltemprice Urban District Council	23	(3)
Hull and Goole Port Health Authority	15	(2)
Private Purchasers	7	(2)

The figures in parenthesis represent the number of samples which were reported as unsatisfactory on the grounds of low meat (or fish) content.

At present there are no LEGAL STANDARDS in this country for meat content in any meat product other than meat paste or spread. In the case of fish products, there are legal standards for fish content in fish pastes and in fish cakes.

2 samples of Fish Cakes (ER 1066A and 1073A) were found to contain only 31 and 27 per cent of fish respectively instead of the required, not less than 35 per cent.

Several of the TRADITIONAL ARTICLES ON SALE IN BUTCHER'S SHOPS have been found to be of unsatisfactory composition.

In assessing the meat content an average purchaser might expect in a particular article two sources of information are very useful. The first is a Food Standards Committee recommendation (where made) (has a national basis), the second is the average obtained by examining products made and sold locally in recent years (has a local basis). This data is incorporated in the following table which also gives the number of unsatisfactory samples examined during the year.

	Standard Required	Samples analysed (recently)		
		Number	Average Meat Content	Unsatisfactory samples (1966)
Aislet	(65)	27	68	0
Black Pudding	65	16	69	3
Brawn	80	2	79	0
Hamburgers etc.	80	77	80	3
Meat Pie	25	160	30	0
Meat and Vegetable Pie	12½	7	14	0
Polony	65	104	55	6
Potted Meat	95	73	86	5
Sausages, Beef	50	319	61	0
Pork	65	505	65	3
Luncheon	65	7	49	1
Sausage Rolls	(20)	70	24	0
Saveloy	(65)	54	61	3

Where the standard is in parenthesis the Food Standards Committee have made no recommendation.

SAUSAGES

Of the 26 samples of PORK sausages examined only 3 were unsatisfactory—KH106, ER 1455 and ER 1458 containing respectively 58, 55 and 57 per cent of meat. The vendor of sample KH 106 was prosecuted, convicted and fined £10.

All 27 samples of BEEF sausages received were of satisfactory composition.

Samples of LUNCHEON sausage (KH 88) with 47 per cent, FRANK FURTER sausage (KH 99) with 56 per cent, and LUNCHEON BEEF sausages (ER 1004) with 53 per cent all contained less than the 65 per cent of meat expected.

The question of how much meat should be present in a sausage has been controversial for many years. In general, the Food Standards Committee have supported the view that ALL sausages with the exception of BEEF sausages should contain 65 per cent. BEEF sausages may contain not less than 50 per cent. Meat and Butcher's Associations on the other hand appear to incline to the view that ALL sausages with the exception of PORK sausages need only contain 50 per cent of meat. This may account for the BLACK PUDDINGS (3), POLONIES (6), and SAVELOYS (3) found to contain less than 65 per cent of meat. It may also account for the appearance of sausages, resembling the traditional pork and beef in appearance and composition under such descriptions as "sausages," pork and beef or vice versa, luncheon beef, mixed, cocktail and hot dog.

SAUSAGE MEAT is required to have the same amount of meat as the corresponding sausages. 1 sample sold as PORK SAUSAGE MEAT (ER 1040A) was found to contain only 51 per cent of meat. The vendor was prosecuted, convicted and fined £5 with £3 costs.

HAMBURGERS ETC.

The sale of flat discs (or rectangles) of meat has increased markedly in recent years. Beefburger or hamburger appear to be the most common, but upwards of 15 descriptions are in use for them. In view of the similarity in appearance and name it seems reasonable to require the same minimum amount of meat in them all.

Of the 19 samples (excluding canned) examined during the year, 3—HU81, HU 83, and HU 84 containing respectively 66, 59 and 67 per cent contained less meat than the expected 80 per cent.

POTTED MEAT

The Food Standards Committee in their Report on Food Labelling 1964 recommended that this article should contain not less than 95 per cent of meat and also that no cereal should be present. On this basis,

of the 8 samples examined during the year no fewer than 5 (KH 389 and 390 and ER 981, 1428A and 1366J) containing respectively 76, 79, 69, 77 and 86 per cent were deficient. None were adulterated with cereal.

DRESSED CRAB

In their report on Fish and Meat Pastes the Food Standards Committee recommended that an article described as DRESSED CRAB must contain 95 per cent of crab meat. On this basis, of the 9 samples examined during the year 2 (KH 624 and 625) containing respectively 88 and 89 per cent of crab meat, were deficient.

PREPACKED MEAT PRODUCTS, usually canned or frozen, have been the cause of considerable concern in recent years mainly due to the frequency with which their descriptions do not indicate the true nature of the contents of their tin or carton. Often considerable quantities of water and/or cereal are incorporated with no or inadequate declaration. The Food Standards Committee in their Report on Canned Meat Products, 1962, recommended the qualifying of the named meat with certain appropriate words as being an adequate declaration. The list of appropriate words includes the following with the amounts of added water and or cereal they could mean in practice in parenthesis: "with jelly" (18%); "with gravy" (20%); "with sauce" (30%); "luncheon" (20%); "Loaf" (35%). The following is a list of the canned meat products reported as unsatisfactory, their respective meat contents are also given. The amount given in parenthesis is the Food Standards Committee recommendation for the article.

HG832	Bacon Grill	88%	(95%)
KH 97	Beef, minced in gravy	67%	(75%)
KH313	Chicken Casserole	40%	(95%)
KH315	Chicken with jelly	63%	(80%)
HG974	Chicken fillets in jelly	75%	(80%)
KH105	Pork, chopped	86%	(95%)
KH 94	Steak casserole	62%	(95%)

A sample of COOKED MEAT (roasted) was submitted with the complaint that it had a pronounced "Fruity" taste. The taste was indeed strong but it was not found possible to ascertain the cause.

A sample of POTTED MEAT in a jar was found to have a strong odour reminiscent of stale cat urine (presumably due to protein decomposition) and the red tint in its colour was less in the top half than in the bottom. Again it was not found possible to ascertain the cause with certainty.

Other Foods

1,639 of the samples examined are classified under the above heading. 31 were found to be of unsatisfactory composition.

2 samples of cooked canned RICE (Private and KH591) were found to be yellow in colour with black patches corresponding in their position with corrosion areas on the interior of their metal containers.

To use a BAKING POWDER satisfactorily one needs to know how much gas (carbon dioxide) it will produce during a normal baking or cooking process. The Food Standards (Baking Powder) Order, 1944 requires that they should yield not less than 8 per cent of what is termed 'available' carbon dioxide. (It is an index of the above). Baking powder (KH 131) yielded only 7 per cent. The deficiency appears to have been caused by storage for too long a time rather than by an original deficiency in raising ingredients.

BUTTER MADEIRA CAKE (ER 971). In my opinion the least one should expect of an article so described is that all the added fat be butter (Milk fat). In the present sample about half of it was not.

The Bread and Flour Regulations, 1963 require that chalk be added to plain white FLOUR. Minimum and maximum amounts are specified. 2 samples, KH141 and 145, were found to contain about 75 milligrammes (per 100 grammes of flour) less than the required minimum of 235 milligrammes. Difficulty is experienced in mixing small amounts of chalk with flour and this is usually claimed to be the reason for the above contravention of the regulations.

CANNED FRUIT AND VEGETABLES. A Code of Practice (CP 4 8/10/65) has recently been agreed for home canned articles. In my view, from the purchasers point of view it is unsatisfactory. I consider that it is reasonable to expect a canner to put as much fruit as possible into a can and cover it with syrup. It is my main objection

to the Code of Practice that it does not appear to support this view. At first glance it appears probable that the larger the fruit the less (by weight) that could be put into a can. It could be argued from this that because of variations in fruit size a lower standard of fruit content than might be thought necessary is required to cover the canning of larger fruits than average. The code does not appear to indicate that this requirement is necessary. For individual fruits the standard may indeed be lower than expected. On the other hand as an example pears and bilberries have the same fruit content requirement. On being immersed in the strengths of syrup used in canning the fruit loses water and as a consequence weight and volume. It could be argued that the housewife does not get a can that appears "full" of fruit even though she would think it is so if she saw it at the filling stage. The Code does not appear to lend support to this view either since the standard for certain fruits canned after the above action could have taken place (i.e. the fruits canned more than once) is lower than if fresh fruits were used. Similar considerations to the above may be applied to canned vegetables.

Canned Vegetables are often covered with salt and water (brine) and canned fruits almost invariably with sugar and water. It is doubtful if the strength of the sugar solutions used justifies the description "syrup." Four descriptions are most commonly met. They are "Light Syrup," "Syrup," "Heavy Syrup" and "Very Heavy Syrup". Fruits are divided into 3 classes and with one exception the meaning of the syrup designations depends upon which class of fruit is being canned. For example the "Heavy Syrup" used to cover strawberries contains more sugar than that used to cover peaches. It is claimed in defence of this somewhat remarkable system of labelling that it indicates to the housewife canned fruits of equivalent sweetness however much the different fruits themselves vary in sweetness. For example strawberries canned with "syrup" taste as sweet as peaches canned with "syrup."

24 samples of CANNED FRUIT and 54 samples of CANNED VEGETABLES were examined during the year. Of these, 3 samples of canned fruit—HG Blackberries, KH 1022 Blackcurrants, KH 1028 Fruit Salad contained less fruit than the standard in the Code of Practice. In addition the fruit salad contained an excess of apricots. 1 Sample of canned vegetables—KH 466 Spinach leaf was deficient in spinach.

The Food Standards (Preserves) Order, 1953, requires that JAM, MARMALADE, FRUIT CURDS and MINCEMEAT must contain a minimum amount of sugar. The amount is regarded as the minimum necessary to avoid rapid deterioration of the product under normal conditions of storage and use. This standard is somewhat unsatisfactory particularly in respect of jam in that it is dependant on other ingredients and was framed with the amount of fruit currently used by the large manufacturers in mind.

The following 6 articles were found to contain less sugar than required by the above mentioned order.

		% Soluble Solids present	% Standard
ER1328	*Raspberry Jam	67.5	68.5
ER 977	Strawberry Jam	55.4	68.5
ER1319	*Cranberry Jelly	66.5	68.5
ER1339	*Marmalade	67.8	68.5
ER 976	Marmalade	66.7	68.5
KH1062	Mincemeat	63.7	65

“Soluble Solids” measurement is the method of assessing sugar content used in the Order. In the samples marked with an asterisk there was some confusion about how the articles were packed. The manufacturer erroneously considered they were packed in hermetically sealed jars.

During recent years samples of MARZIPAN (including ALMOND PASTE) examined have usually contained more than 25 per cent of ground almonds (average of 134 samples examined since 1957—28 per cent). 18 samples were examined during 1966. 2—KH 1101 and KH 1104 containing respectively 22 and 23 per cent—were reported as unsatisfactory.

In 1951 the Ministry of Food negotiated with the trade a Code of Practice in which it was agreed that if to any item of chocolate or sugar confectionery the adjective “butter” was applied then it should contain at least 4 per cent of milk fat. Fat in excess of this need not be milk fat. The Food Standards Committee in their report on Claims and Misleading Descriptions (1966) endorse this practice. Sweets described as RUM and BUTTER toffees (ER 1421) were found to contain no butter.

A sample of TOFFEES described as milk chocolate variety—KH 873—were found to consist of 1 milk chocolate with 6 plain chocolate toffees.

CHEESE. 5 samples of processed Gruyere cheese (KH 913), containing between 43 and 49 per cent of water were reported as unsatisfactory. It is considered that 38 per cent is a reasonable maximum.

The Food Standards (ICE CREAM) Regulations, 1959, include the following requirements—(i) that an article described as an Ice Cream shall contain at least 5 per cent of fat and 7.5 per cent of non-fat milk solids; (ii) the same standards shall apply to an article described as DAIRY Ice Cream except that the fat must be all butter fat, and (iii) the use of artificial sweetening materials such as saccharin are prohibited. The Food Labelling Order requires pre-packed ice cream to bear a statement to the effect that it contains fat not derived from milk and also suggestions of connections with a dairy, by word or pictorial device, are forbidden.

Details of the 89 samples examined are as follows:—

KINGSTON UPON HULL	No.	Av.	Fat %		Non-fat Milk Solids %		
			Max.	Min.	Av.	Max.	Min.
Dairy Ice Cream	12	9.50	13.4	6.5	11.11	14.4	9.5
Ice Cream	72	8.83	15.4	5.6	11.77	14.9	9.3
	84	8.90	15.4	5.6	11.68	14.9	9.3
EAST RIDING COUNTY COUNCIL							
Ice Cream	5	9.04	11.1	5.8	11.56	12.2	10.8

No sample was found to contain artificial sweetening material. It will be noted that all samples were of satisfactory chemical composition.

According to the Food Standards (Tomato Ketchup) Order, 1949, TOMATO SAUCE must contain not less than 6 per cent by weight of tomato solids.

2 of the 10 samples examined during the year—ER 1127A and HU 65/66 were found to contain only 4.5 per cent.

The Food Standards (Butter and Margarine) Regulations, 1955 and the Butter Regulations 1966 which are to replace them permit up to 16 per cent of water to be present in BUTTER. This is a generous

amount and analytical figures indicate that manufacturers take full advantage of it. 40 samples were examined during the year. 39 were found to be satisfactory. 1 sample—ER 1627 containing 16.4 per cent was reported as unsatisfactory.

1 sample—HU 30/66—described as ‘real LEMON JUICE preserved with sulphur dioxide’ was found to contain no vitamin C. The firm which packed this article did not think that Vitamin C need be present. At the same time they sought to blame their suppliers and the retailers for its absence.

Soft Drinks are perhaps best regarded as pleasantly flavoured solutions in water of sugar and/or synthetic sweetening material. Nevertheless the Soft Drink Regulations 1964 require that drinks which claim to be flavoured with fruit juice must contain a specified minimum percentage. In the case of the citrus fruits the description SQUASH (25% fruit juice) and CRUSH (5% fruit juice) constitute claims. 2 articles—Orange Squash ER 1128A and a “Triple” Squash containing orange, pineapple and lemon juice ER 1140A—were each found to contain 15 per cent of fruit juice which is only 60% of the minimum required by the Regulations.

Food Labelling

Introduction—Section 6 of the Food and Drugs Act, 1955, makes it an offence to give a label with or publish an advertisement for, a food which falsely describes it or is likely to mislead a purchaser as to what he would be buying.

Section 7 of the Act gives very wide powers for the making of Regulations for controlling the labelling and advertising of foods. These are exercised to quite a marked degree in the Food Labelling Order. This Order has recently been reviewed by the Food Standards Committee who have published their opinions in a two part report (1964 and 1966).

Part IV of the Food Labelling Order deals with the labelling of certain foods (ICE CREAM, PEAS, COFFEE, BUTTER, MARGARINE, STRONG NON-BREWED CONDIMENT). In recent years new or revised Food Standard Regulations have usually incorporated labelling provisions relating to the commodities being controlled.

In the year, 5 articles were considered unsatisfactorily labelled; all submitted by Kingston upon Hull.

Descriptions—Most foods when packed ready for sale must carry a label giving the usual or common name of the article.

KH 544 COTTAGE CHEESE. This article was a type of cheese. It is not considered that the word Cottage indicated the type clearly enough. Proposed Regulations require the addition of the words “Low Fat Soft Cheese” with or without the word Cottage.

Declaration of Ingredients—To comply with the Food Labelling Order, many foods consisting of more than one ingredient, when packed ready for sale, must include on their label a statement as to which ingredients (with the exception of added water) are present and what are their relative amounts.

KH 117 and 123 MALT VINEGAR. The presence of added salt was not disclosed.

KH 1137 FOOD COLOURING solution. Though prepared other than by dissolving a permitted colouring matter in water, no disclosure of ingredients was given.

Claims—KH 943 STARCH REDUCED Wheat Flakes. In my opinion the description Starch Reduced was unjustified without further information being given on the label. Also the claim that the article was “low in starch” was considered grossly misleading.

Food Additives

Several regulations of a general character are concerned with the addition of chemicals of no intrinsic nutritional value, to foods.

These include the following:—

Artificial Sweeteners Order	1953
Colouring Matter Regulations	1957/1966
Antioxidant Regulations	1958/1966
Preservative Regulations	1962
Emulsifiers and Stabilisers Regulations	1962
Mineral Hydrocarbons Regulations	1964/1966

Also several regulations prohibit or permit the addition of chemicals to the particular food to which they refer. For example,

the Bread and Flour Regulations, 1963, permit the addition of certain of the so-called Bleaching and Improving Agents to Flour. The Meat (Treatment) Regulations, 1964, prohibit the addition of certain chemicals to raw and unprocessed meat.

A considerable amount of time is spent at the City Laboratories seeking contraventions of the above Regulations.

Details of certain of the examinations are as follows:—

Regulations	Number examined	Number containing	Contraventions
Preservative	940	140	10
Colouring Matter	674	374	4
Antioxidant	124	18	0

The numbers do not include milk samples all of which were examined for the presence of preservatives and colouring matters with negative result.

Preservatives

All of the samples which contravened the Preservative Regulations consisted of CAULIFLOWERS packed IN BRINE. 10 samples were submitted by the Hull and Goole Port Health Authority, and all were found to contain SULPHUR DIOXIDE. This is permitted in this article in wholesale trading but only if accompanied by a document giving the description and maximum quantity of the preservative present. The amount present varied between 80 and 450 parts per million. The packers said that sulphur dioxide was not being added as such but was derived from the casks which had become contaminated by their previous contents.

TETRACYCLINES are antibiotics frequently used in medicine. In recent years trials have been carried out to ascertain their value as food preservatives. The Preservative Regulations, permit up to 5 parts per million to be present in raw fish.

It appears that fish landed at Hull may contain Chlortetracycline and fish landed at Grimsby, Oxytetracycline. During the year 3 samples all (from Grimsby) were submitted for examination. No tetracyclines were detected.

Colouring Matters

2 samples of sweets—HU 113/66 and HU 118/66—contained a non permitted BLUE colouring matter,.

Non permitted ORANGE colouring matters were present in a Lemonade Powder—KH 613, and a Food Colour KH 741.

Antioxidants

It will be noted that no sample was found to contravene the Regulations. In the last two years a marked increase has been noted in the percentage of samples containing permitted amounts.

The Ministry of Food is thought to be currently reviewing the following classes of food additive: solvents, pH regulators, sequestrants, humectants, propellants, glazes, antifoaming agents, anticaking agents, release agents and firming agents.

Foods Containing Extraneous Matter

From time to time all manner of peculiar objects are found, in or on foods.

Details of such samples (7) received during the year are as follows:—

Pineapple Pudding—the parts of pineapple which had been in contact with the metal container were stained black.

Tomato sausages—ER 1131—and Beans in tomato sauce—HU 127/66—both had mould growths.

ER 1312J—A mould was adhering to the interior of a bottle containing milk.

HU 117/66—The deposit in a milk bottle consisted of cement

ER 1311J—Milk contained cereal bran.

HG 66/79—Bacon Rind—was stained a deep blue colour

Most of the above samples were received as a result of complaints by private purchasers.

Trace Metals

In their production many foods are liable to contamination by another, more dangerous, type of extraneous matter. They may pick

up traces of chemicals some of which are highly toxic, and which are not visible to the eye. Regulations of a general character concerned with this type of extraneous matter are the:—

Arsenic in Food Regulations, 1959.

Lead in Food Regulations, 1961.

In addition the Food Standards Committee has considered and recommended limits for the amounts of Copper and Zinc that may be present in Foods. The Fluorine in Food Regulations, 1959, are concerned with the contamination of acidic phosphates, and hence the foods which often contain them such as Baking Powder and Self Raising Flour, by Fluorine.

A considerable amount of time is spent at the City Laboratories seeking contraventions of the above regulations (or recommendations). Details are as follows:—

Regulation or recommendation	Number examined	Number containing	Contraventions
Arsenic . . .	288	24	0
Lead . . .	464	265	0
Copper . . .	66	55	3
Other Metals etc. .	55	34	0

KH 1143, 1144 and HU 54/66 Candied Peels contained respectively 35, 35 and 60 parts per million of copper. 20 parts per million is the generally accepted unofficial limit. The most likely source of the copper is one of the sprays used on the fruit, from which the peel is derived. The use of defective tinned copper tubing in the processing plant has also been suggested.

Antibiotics in Milk

In mid 1963 the Milk Hygiene Sub-Committee (a sub-committee of a Committee set up by the Minister of Food to advise on technical problems in the dairy industry) published their report on “ Antibiotics in Milk in Great Britain.” In England and Wales during 1961 41,700 samples of ex-farm milks were examined. 11 per cent were shown to contain antibiotics. The survey also revealed that penicillin was the most common antibiotic present and that seasonal and regional variation existed.

In September 1963 the testing of samples was begun at the City Laboratories.

	Number examined	Antibiotics present in	per cent	Penicillin		Other Antibiotics
				more than 0.05 I.U. per ml.	less than 0.05 I.U. per ml.	
1963	165	26	15.7	—	—	—
1964	686	104	15.2	16	87	1
1965	1198	59	4.9	10	49	—
1966	1149	58	5.0	11	46	1

It seems probable that successful prosecutions recorded in other parts of the country have played some part in the marked reduction in the percentage of samples found to contain penicillin.

Pesticides

Since 1945, but more particularly in the last ten years a large number of “ wonder ” chemicals have been introduced into agriculture and horticulture for the control of pests. Most are highly toxic to humans and there is the danger that significant amounts may find their way into foodstuffs. This danger can be considerably reduced by care in their use. In this country control is mainly exercised by a voluntary scheme designed to promote this. While agreeing that this may be satisfactory as far as it goes many people would like to be reassured that it is producing the desired result. There is a growing demand for a much more extensive testing of foods than has hitherto been attempted.

During the year a national scheme of testing was begun in which Kingston upon Hull, East Riding County Council and Haltemprice Urban District Council agreed to take part. The scheme has been worked out by the Association of Public Analysts with advice from various government agencies. It has the support of the County Councils Association, the Association of Municipal Corporations and the Urban District Councils Association. England and Wales are divided into 7 zones. Kingston upon Hull, East Riding C.C. and Haltemprice U.D.C. are in zone 4 which consists of the area covered by the geographical boundaries of Yorkshire, Durham and Northumberland. At the time of writing the scheme is scheduled to last for 2 years. 672 samples of selected foods will be taken in zone 4 and of these Kingston upon Hull Laboratories will examine 56.

One sixth of the survey was concluded in 1966 and the results may be summarised as follows. 8 samples were examined at Kingston upon Hull and of these 5 were found to contain traces of pesticides. In no case did the amount exceed the suggested 'lowest significant level.' In zone 4 as a whole 112 samples were examined. 29(25.9%) were found to contain traces but only 7 of these was there more than the 'lowest significant level' found. In no sample was more found than is likely to be regarded as a realistic limit.

Independent of the above scheme, East Riding C.C. submitted 17 samples and the Hull and Goole Port Health Authority 27 samples for pesticide residue examination. The results obtained, including the the samples received in connection with the above scheme are summarised in the following table.

Article	National Testing Scheme		Hull and Goole P.H.A.		East Riding C.C.	
	No. examined	No. containing	No. examined	No. containing	No. examined	No. con'tg
Apples	1	BHC, DDT, Pb.	14	3 DDT	1	0
Beef (steak)	1	BHC, Heptachlor	—	—	—	—
Bread	1	DDT	—	—	—	—
Carrots	—	—	2	0	1	BHC
Cherries	—	—	1	0	—	—
Cucumber	—	—	—	—	1	Dieldrin
Fish (Brill)	1	DDT op & pp BHC	—	—	—	—
Ham, cooked	—	—	—	—	1	DDT, BHC
Lemons	—	—	3	2 Dieldrin	—	—
Lettuce	—	—	—	—	2	1 Chlor- benzilate
Margarine	1	0	—	—	—	—
Peaches	—	—	1	0	—	—
Pears, canned	1	DDT	—	—	—	—
Potatoes	1	0	6	2 Dieldrin & DDT 1 DDT	1	BHC
Rice	1	0	—	—	—	—
Tomatoes	—	—	—	—	10	2 BHC
	8	5	27	18	17	7

Except in the Hull and Goole P.H.A. apple samples which contained D.D.T. varying from 0.2—2 parts per million no pesticide was found in an amount above the suggested 'lowest significant level.'

In each sample examination was by the Drosophila Fly Test and Gas Liquid Chromatography. The method is a very sensitive indicator of contamination by Organo Chlorine pesticides. The apparatus is

now available in the laboratory to increase the sensitivity of detection of organo phosphorous compounds, already quite sensitive, to similar limits.

Aflatoxin

In Britain in 1960 outbreaks of an apparently new disease occurred in young turkeys causing over 100,000 deaths in a few months. The common factor in all outbreaks was found to be ground-nut meal. Investigation showed that a strain of the common mould *Aspergillus flavus* was the responsible agent. It produces a toxic factor (named AFLATOXIN) when grown on sterile non toxic groundnuts. Comparative feeding trials have shown variations in susceptibility to the effect of AFLATOXIN in different species of animals. Ducklings are particularly sensitive, chickens comparatively resistant. Lambs are much less susceptible than calves or pigs. It must be emphasised that there is no scientific evidence that humans have suffered ill effects from the consumption of groundnuts contaminated with AFLATOXIN. However, the problem is being extensively studied nationally.

During 1966 5 samples of groundnuts were examined for aflatoxin with negative results. In addition 2 samples of Eating Chestnuts and 74 samples of Brazil Nuts were examined. Though several samples were found to contain mouldy nuts (a condition easily rectified by visual examination before the articles are placed on retail sale) only 2—both Brazil Nuts (HG 66/72 and 66/99) were found to contain aflatoxin.

Drugs

118 samples were submitted for examination during the year, 91 by Kingston upon Hull, 25 by the East Riding County Council and 2 by Haltemprice Urban District Council. 4 were found to have compositional defects and 2 were unsatisfactorily labelled.

Details are as follows:—

KH 269—Soluble Aspirin Tablets—were found to contain excess salicylic acid.

KH 295,296,300—Parrish's Chemical Food—these 3 samples were deficient in iron, containing respectively 0.38, 0.38 and 0.28% W/V. In addition KH 295 was incorrectly labelled " B.P."

KH 262—Aspirin tablets—The amount of acetylsalicylic acid present was expressed in grains instead of in grammes.

KH 1297—Friar's Balsam— was labelled “ B.P.” There is no monograph on this article in the current edition of the British Pharmacopeia.

In December, 1964 a circular was issued by the Ministry of Health pointing out that Sampling Officers had the power to sample drugs not on sale to the general public and usually received by them by way of doctors' prescriptions. This power has existed for a long time but it was represented to the Minister that some pharmacists were reluctant to supply these drugs. During the year East Riding County Council submitted 7 such drugs for examination.

In recent years several leading members of the Pharmaceutical Profession have severely criticised the method of Drug testing used by most Local Authorities. They have suggested that it be abandoned and the testing taken over by their profession. One would hope that they already exercise every possible control over their products. New legislation to strengthen the power of the Local Authorities would seem to me a much better solution.

Bacteriological Examinations

A total of 500 samples were submitted by the Medical Officer of Health (Kingston upon Hull) for bacteriological examination. They consisted of the following: Designated Milks 312; Ice Creams 85; Swimming Bath Waters 60; and Footbath Waters 43. 42 received adverse comment.

In addition Hull and Goole Port Health Authority submitted 56 samples of liquid egg for examination. 1 was reported as unsatisfactory.

Designated Milks—According to the Milk (Special Designation) Regulations, 1963, milk sold as Untreated or Pasteurised must comply with a test which is some indication of keeping-quality (Methylene Blue Test), also Pasteurised (Phosphatase Test) and Sterilized (Turbidity Test) milks must comply with tests that indicate they have been efficiently heat treated.

During the year the following number of milk samples were examined to check the designation used—Untreated 141, Pasteurised

135, Sterilised 36. No fewer than 11 Untreated and 5 Pasteurised milks failed the Methylene Blue Test while 1 Sterilised Milk failed the Turbidity Test.

Ice Cream—Using the Methylene Blue Test 85 samples were examined and graded as follows: Grade 1, 66; Grade 2, 11; Grade 3, 7; Grade 4, 1. The samples in Grades 3 and 4, 8 (9.4%) were considered to be unsatisfactory. In previous years 23% (1962), 9.6% (1963), 7.7% (1964), 21.3% (1965) were similarly considered so. There was evidence in each case that low grading was associated with the presence of thermoduric organisms.

Swimming bath Waters—60 samples from 14 swimming baths were examined for the presence of presumptive coliform organisms. In 1 case they were shown to be present.

Footbath Waters—43 samples from 10 footbaths, adjacent to the swimming baths, were also examined for the presence of coliform organisms. In 16 samples they were shown to be present.

Fertilisers and Feeding-Stuffs

24 animal feeding stuffs and 24 fertilisers were submitted by Kingston upon Hull during the year, of which 7 (1 animal feeding stuff and 6 fertilisers) were unsatisfactory, in as much as their statutory statement of composition did not agree, within the official limits of variation, with the analytical findings.

Details are as follows:—

ANIMAL FEEDING-STUFFS

No. 9	Breedemon Mash	Fat	3.7%	(2.25%)
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FERTILISERS

No. 27	Lawn Conditioner	Insoluble Phosphoric Acid	2.65%	(3.25%)
No. 28	Lawn Conditioner	Soluble Phosphoric Acid	1.4%	(2.0%)
		Insoluble Phosphoric Acid	7.2%	(6.0%)
No. 29	Growmore	Soluble Phosphoric Acid	4.1%	(6.5%)
No. 34	Bone Meal	Nitrogen	6.37%	(5.5%)
		Phosphoric Acid	16.5%	(21%)
No. 35	Fertiliser	Potash	4.3%	(3.6%)
No. 47	Liquid Fertilizer	Nitrogen	6.7%	(9.0%)
		Soluble Phosphoric Acid	2.6%	(5.0%)
		Potash	5.3%	(4.0%)

The figures given are those obtained on analysis. The figures in parenthesis are the amounts of the respective ingredients claimed to be present.

6 animal feeding stuffs were submitted privately for examination. 2 were found to be unsatisfactory. In one—a Compound Feeding Stuff—excess protein and fibre were present. In the other—Indian Maize Gluten Feed—black lumps of charred organic matter were present.

Atmospheric Pollution

The department maintained its interest in atmospheric pollution throughout the year. We collaborated as fully as before in daily measurements of smoke and sulphur dioxide made at 5 specially selected sites within the City. In addition we measured smoke readings taken daily at Market Weighton.

The average daily amounts of smoke and sulphur dioxide, expressed as microgrammes per cubic metre, found in the atmosphere outside the CITY LABORATORIES since 1958, are as follows:—

	COLDER MONTHS Jan.—Mar. & Oct.—Dec.		WARMER MONTHS April—September		YEAR	
	Smoke	SO ₂	Smoke	SO ₂	Smoke	SO ₂
1958	440	220	220	110	330	170
1959	300	200	110	110	210	160
1960	270	190	100	110	190	150
1961	250	200	90	90	170	150
1962	250	210	80	90	170	150
1963	190	180	80	80	140	140
1964	190	190	70	100	130	150
1965	150	180	60	80	110	130
1966	130	160	60	90	100	130

The City now has 10 areas under smoke control (it being understood that certain of these adjoin each other) 3 have been controlled since 1/6/59, 5 since 1/10/61, 1 since 1/10/62 and the other since 1/10/63. Several points of interest emerge from a consideration of the above figures.

1. The dramatic fall in smoke levels in the period 1958/59. This appears to be undoubtedly due to the introduction of smoke control areas.

2. The more gradual reduction in smoke levels in the period 1959 to date primarily in the colder months. This may be due to the introduction of smoke control but redevelopment in the area where readings are taken is a confusing factor.

3. The small change in the Sulphur Dioxide figures. Redevelopment in the area is again a confusing factor but so far as they go the figures indicate that remedial measures to overcome an expected increase in Sulphur dioxide emission have been reasonably successful.

The daily averages recorded at the above mentioned 5 stations are as follows:—

		Average 1963-66	
		Smoke	Sulphur dioxide
Residential (Smoke Controlled)	Greenwich Avenue	40	80
Residential (Low population density)	Ellerburn Avenue	130	110
Residential (high population density)	Gordon Street	200	160
Commercial	184 High Street	120	130
Industrial	Clough Road	100	160

The daily averages recorded at the Market Weighton stations are:—

	COLDER MONTHS		WARMER MONTHS		YEAR	
	Smoke	SO ₂	Smoke	SO ₂	Smoke	SO ₂
No. 1	90	120	30	80	60	100
No. 2	incomplete data available		12	40	—	—

Miscellaneous samples for other Corporation Departments

501 samples were submitted compared with 518 in 1965.

Water Engineer—302 samples of water drawn at these laboratories were examined for residual chlorine only. The average amount found was 0.15 parts per million. The figures varied between 0.10 and 0.28 parts per million.

Medical Officer—147 samples were submitted consisting of Swimming Bath Waters (60), Footbath Waters (43), Paddling Pond Waters (20) for residual chlorine determination: Waters (12) to assess the efficiency of a chlorination plant. The total residual

chlorine found was never less than 0.12 parts per million; on 5 occasions the amount present exceeded 0.2 parts, 0.75 parts being the highest amount recorded: Underfloor waters (6) to assist in the discovery of their source. Sewage contamination was found in 4 samples, the other 2 appeared to be mains supply; Pavement dusts (2), one was found to consist of ordinary atmospheric dust mixed with an unusually large amount of carbonaceous matter: Grass clippings (1). No evidence of the presence of acid and/or alkali contaminants was found. It appeared unlikely that their brown appearance was due to atmospheric pollution. Waters (1). This sample was submitted as a result of a complaint that water from the same tap was quite often cloudy and that it stained kettles, baths etc. The complaint was found to be justified and the matter referred to the Water Department. Tablets (1). These tablets had been discovered under suspicious circumstances. They were claimed by the owners to have a mildly sedative action. They were in fact found to be a type of "pep pill." Floor sweepings (1) were found to consist almost entirely of strands of nylon.

City Engineer—submitted 30 samples consisting of Soils (17) and Waters (3) for pH and sulphate content assessment: Trade Effluents (6) 2 from a Brewery and 4 from an Engraving firm. 2 of the latter contained immiscible organic solvent: Sewage Sludges (2) to assess the stage of digestion that had been reached. The results indicated that it was doubtful whether or not digestion had even started: Concrete (1) for determination of specific gravity: Fatty Matter taken from a sewer (1) to determine if it was of animal, vegetable or mineral origin. It proved to be animal.

City Coroner—submitted 9 specimens consisting of Blood (for carbon monoxide determination) 1: (for barbiturate content determination) 1: (for cyanide determination) 1: (for alcohol determination) 2: Urine (for barbiturate determination) 2: (for cyanide determination) 1.

Public Cleansing Superintendent—submitted 5 samples for examination. 3 were from the Catfoss Tip and 2 from Hessle Tip. It will be recalled that the winter of 1965/6 was very wet and the samples were associated with "water logging" of the tips.

City Architect—submitted 3 samples. 1 was a sample of "under floor" water found at a school. Air and Water were examined at another school in an endeavour to trace the source of a peculiar smell.

Supplies Officer—submitted 3 samples of Detergent Powders for examination.

Parks Superintendent—submitted 1 sample of water taken from East Park Boating Lake.

Chief Constable—submitted a bottle containing the dregs of a solution which proved to be 10% potassium cyanide.

Miscellaneous—Other Sources

1,527 samples were submitted compared with 1,857 in 1965.

The 'other sources' mentioned in the title consist of neighbouring authorities, private firms and individuals.

Atmospheric Pollution—1,212 estimations were made.

Milks—180 samples were submitted for examination. 165 required confirmation of designation, 10 the determination of fat and non fatty solids, 2 the determination of Freezing Point and 3 the determination of fat only.

Other Foods and Drugs—18 samples were submitted.

The moisture content of 1 sample of **Brazil Nuts** was required. 3 samples of **fresh fish** (1 haddock and 2 cod) were examined for the presence of tetracyclines with negative result. **Cream**-fat content determined. An entire small non waterproof medicated elastic plaster was found embedded in one portion of **cake**. In another (not from the same **cake**) a piece of thin wire was found. In both cases it appeared probable that the foreign "bodies" had gained access at the time the cakes were being made. Some confusion had arisen as to which of 2 compounds—nitrofurazone or furazolidone was present in an **animal feeding stuff supplement**. 24 per cent of the latter was found. **Tablets** were submitted for identification and a comment on the effect they would be likely to have if taken with brandy. It would appear that consumers of alcoholic beverages have two fringe groups—one who complain that something is being put into their drinks to make them weaker and the other who complain that something is occasionally put into their drinks to make them stronger. **3 samples**—a caustic "paint," a solution from which a nasal spray

was usually made up and a nasal spray were submitted for examination. The fear that a trace of the caustic paint had found its way into the nasal spray proved to be groundless. The meat contents of 2 samples of **sausages** and 1 sample of **sausage meat** were checked and found to comply with the specification under which they were sold. **A lime juice cordial** submitted by a Soft Drinks manufacturer undoubtedly had a peculiar taste and smell. We were unable to definitely identify the cause which appeared to be associated with the lime ingredient used. **Potato Crisps** which during a very careful examination revealed no abnormalities had been submitted with a complaint that they had caused sickness and diarrhoea. **Chutney**—home made was found to be of satisfactory composition and in particular free of harmful metallic contamination.

Waters—105 samples were submitted. Though numerically not very large in the work of the Department water examinations are required to answer a variety of queries. Perhaps the most common is—Is the water fit to drink and likely to remain so? The analysis carried out depends upon the source of the water. During the year, in this connection, the following samples were analysed—Ship's Drinking Waters 57 (HG), tap and borehole waters 34.

A gentleman who had recently had a bathing pool installed in his back garden discovered that the maintenance instruction manual was like the water—far from clear. We were able to offer advice after the examination of 2 samples of water (and several proprietary articles with which he had been advised to treat the pool water.)

3 samples of ice submitted for examination were found to be heavily contaminated. 1 sample of water was examined to determine whether it would be likely to support fish life. Another to determine if cattle could drink it safely. It was concluded that the latter would be unlikely to kill cattle but that its taste was so objectionable that the cattle would be unlikely to drink it. 3 samples were examined to determine their likely corrosive effect on steel radiators.

Hardness and Chloride were determined on 1 sample of water.

The Suspended Solids content of 2 Trade Effluents were determined.

Water of abnormal pH and/or containing sulphates above a low minimum amount damage ordinary concrete. pH and sulphates are therefore often determined in sub soil waters and sewage and trade effluents to assess their likely effect. 1 effluent was examined during the year.

Toxicological—Human—2 specimens were submitted for examination. 1 of blood was found to contain alcohol corresponding to the consumption of 5 pints of beer. The other, urine from a person who had been working with volatile lead compounds was found to contain traces of lead.

Miscellaneous—10 samples were submitted. They consisted of the following:

Deposits 6 (2 consisted of ordinary local atmospheric dust, 1 was found on a bench in a workshop, 1 was taken from a heat exchanger, 1 was taken from the interior of a hose pipe, 1 was on a filter paper). Crystals 1 (which had formed on the bottom of a swimming pool and were the result of using “hard water”) Sterox1, Soil 1 (pH and SO_4 determined) Transformer Oil 1 (was examined and found to be still suitable for use).

APPENDIX I**Summary of Samples Received**

Milks	2,978
Other Drinks, Foods and Drugs	2,189
Air Pollution	4,585
Water Samples	728
Miscellaneous Samples	103

	10,583

APPENDIX II

Table of Milk (Appeal to Cows) Samples
Kingston upon Hull C.B.

Date	Sample No.	Milk-Fat Per Cent	Non-fat Solids Per Cent	Freezing-point Depression (Hortvet)
22/6/66	ER1044A	3.95	8.20	0.539°C
	ER1045A	2.40	8.60	0.537°C
20/12/66	1484A	4.40	8.65	0.541°C
	1485A	4.20	8.60	0.538°C
	1486A	4.45	8.70	0.542°C
	1487A	4.05	8.50	0.535°C
21/12/66	1488A	4.15	8.55	0.530°C
	1489A	3.65	8.75	0.536°C
	1490A	3.85	8.65	0.544°C
	1491A	3.65	8.65	0.536°C

East Riding County Council

Date	Sample No.	Milk-Fat Per Cent	Non-fat Solids Per Cent	Freezing-point Depression (Hortvet)
5/7/66	1050A	3.70	9.20	0.535°C
	1051A	3.55	9.05	0.536°C
	1052A	3.70	9.15	0.533°C
	1053A	3.75	9.40	0.537°C

APPENDIX III

Table of Samples examined under the Food and Drugs Act

	Kingston upon Hull	East Riding C.C.	Hull Goole P.H.A.	Haltem- price U.D.C.	Private	Unsatis- factory
<i>Foods:</i>						
Almonds, ground . . .	9	4	—	4	—	—
Angelica	5	—	—	—	—	—
Apples	—	1	15	—	—	—
Arrowroot	2	—	—	2	—	—
Baby cereals	3	—	—	—	—	—
Baby puddings	4	—	—	—	—	—
Bacon and products	9	—	3	—	1	1a, 1d.
Baking powder	8	—	—	4	—	1a.
†Beef products	4	3	1	—	—	1a.
Beer	1	19	—	—	—	—
Biscuits	10	6	—	—	—	—
Black puddings	5	—	—	—	—	3a.
Brazil Nuts	—	—	74	—	2	2d.
Bread crumbs, cooking	8	—	—	—	—	—
Breads, various	21	1	—	—	1	—
Breakfast cereals	8	—	—	—	—	1b.
Butter	29	5	—	6	—	1a.
Butter Oil	—	—	1	—	—	—
Cakes/cake	17	4	—	—	—	1a.
Cake decorations	18	—	—	1	—	—
Carrots	—	1	2	—	—	—
Cereal beverage powder	2	—	—	—	—	—
food	—	1	—	—	—	—
Cheese and products	34	1	1	—	—	5a, 1b.
Cherries	—	—	1	—	—	—
glace	9	1	—	4	—	—
Chestnuts	—	—	2	—	—	—
Chewing Gum	—	2	—	1	—	—
Chicken products	6	1	1	—	—	3a.
Chocolate substitute	1	—	—	—	—	—
Chocolates	3	2	—	—	—	1b.
Christmas puddings	10	7	—	—	—	—
Tree Decorations	16	—	—	—	—	—
Citric Acid	—	—	1	—	—	—
Cocoa	3	—	—	3	—	—
Coconut, desiccated	8	2	—	—	—	—
Coffee	8	1	—	—	—	—
soluble solids	—	7	—	—	—	—
and Chicory essence	4	3	—	—	—	—
Carried Forward	265	73	102	25	4	22

	Kingston upon Hull	East Riding C.C.	Hull Goole P.H.A.	Haltem- price U.D.C.	Private	Unsatis- factory
Brought Forward	265	73	102	25	4	22
Cooking Fats . . .	4	2	—	—	—	—
Cordials	3	5	—	—	—	—
*Corned beef and products	2	—	1	4	1	—
Cream	10	12	—	—	—	—
Imitation	1	—	—	—	—	—
of Tartar	1	—	—	2	—	—
Crushes	1	1	—	—	—	—
Cucumber	—	1	—	—	—	—
Curd	—	2	—	—	—	—
Drinking chocolate . .	3	3	—	—	—	—
*Drinks, Whole citrus .	4	5	—	—	—	—
Dripping	16	1	1	—	—	—
Eggs, Liquid	—	—	56	—	—	1
Emulsifying Agent . .	1	—	—	—	—	—
Fish cakes	4	6	—	1	—	2a.
dinner	2	—	—	—	—	—
paste or spread . .	11	2	—	—	—	—
various	17	—	—	7	—	—
canned	21	1	3	—	1	2a.
Flour	8	2	—	—	—	2a.
mixtures	10	2	—	—	—	—
self raising	8	3	—	—	—	—
Food Colours	15	—	—	—	—	1b, 1c.
Flavourings	14	—	—	—	—	—
Fruit, canned	13	6	4	—	1	3a.
crystallised	5	1	—	—	—	—
curds	9	3	—	—	—	—
dried	44	4	1	—	—	—
juices	—	2	—	3	—	1a.
pie filling	—	1	—	—	—	—
pulp	—	—	2	—	—	—
Gelatine	—	2	—	1	—	—
Glucose beverages . .	—	1	—	—	—	—
Golden Raising powder .	1	—	—	—	—	—
Gravy mix	4	—	—	—	—	—
salt	1	1	—	—	—	—
Groundnuts	—	—	5	—	—	—
†Ham products	13	1	2	—	—	—
Hamburgers. etc. . . .	12	3	—	4	—	3a.
Honey	—	2	—	—	—	—
Horseradish (creamed) .	—	—	—	1	—	—
Ice Cream	74	6	—	—	—	—
Dairy	12	—	—	—	—	—
Carried Forward	609	154	177	48	7	38

	Kingston upon Hull	East Riding C.C.	Hull Goole P.H.A.	Haltem- price U.D.C.	Unsatis- Private factory	
Brought Forward	609	154	177	48	7	38
Ice Lollie Liquids . . .	—	2	—	1	—	—
Jam	10	20	—	—	—	3a.
Jellies, Table	17	1	—	—	—	—
†Kidney products . . .	—	—	1	—	—	—
Lactose	—	—	1	—	—	—
†Lamb products	1	—	—	—	—	—
Lard	20	1	—	5	—	—
Lemons	—	—	3	—	—	—
Lettuce	—	2	—	—	—	—
†Liver and products . .	1	1	—	—	—	—
*Luncheon meat	2	—	1	—	—	—
Macaroni etc.	4	—	—	—	—	—
Malted Milk Powders . .	6	—	—	—	—	—
Margarine	14	4	—	—	—	—
Marmalade	11	4	—	—	—	2a.
Marzipan inc. Almond Paste	9	8	—	1	—	2a.
Marzipan substitute . .	1	—	—	—	—	—
Meat	—	—	—	—	2	1a.
extracts	2	—	—	—	—	—
*pastes and spreads . .	19	6	—	—	—	—
*pies	10	1	—	—	1	—
products miscellaneous .	3	1	2	—	—	—
*roll inc. stuffed . . .	1	—	—	—	—	—
Milk	1166	156	—	9	3	103
Channel Islands	69	24	—	3	—	8
Canned	13	4	1	—	—	—
Dried	—	2	1	—	1	—
Puddings	11	—	—	—	—	—
Mincemeat	9	2	—	—	—	1a.
†Minerals	10	5	—	—	—	—
Mint Jelly	—	1	—	—	—	—
Mousse	2	—	—	—	—	—
Mustard Powder	—	1	—	—	—	—
prepared	4	3	—	—	—	—
Noodles etc.	2	—	—	—	—	—
Olive Oil	—	—	—	—	2	—
Oranges	—	—	3	—	—	—
Peaches	—	—	1	—	—	—
Peas Pudding	1	—	—	—	—	—
Peel, candied.	6	—	—	1	—	3d.
cut, mixed	9	2	—	1	—	—
Pickle, sweet or Chutney .	—	3	—	5	—	—
Carried Forward	2042	408	191	74	16	166

	Kingston upon Hull	East Riding C.C.	Hull Goole P.H.A.	Haltem- price U.D.C.	Unsatis- Private factory	
Brought Forward	2042	408	191	74	16	166
Pickles, various . . .	—	—	6	—	—	—
Polonies, various . . .	6	1	—	—	—	6a.
†Pork products . . .	4	1	—	—	—	1a.
Potatoes . . .	—	1	6	—	—	—
Potato Crisps . . .	9	—	—	—	—	—
*Potted meat . . .	3	4	—	—	1	6a.
Puddings, miscellaneous	—	—	—	—	1	1d.
Rice and products . . .	21	—	1	4	2	2a.
Rolls	4	1	—	—	—	—
Rusks	2	—	—	—	—	—
Saccharin tablets . . .	7	—	—	—	—	—
Sacking	—	—	1	—	—	1d.
Sago and products . . .	—	—	—	4	—	—
Salad Cream	6	5	—	4	—	—
Salt	10	—	—	5	—	—
Sauces	1	7	2	7	—	2a.
Sauce mixes	12	—	—	—	—	—
Sausages, various . . .	25	34	—	6	—	6a, 1d.
Sausage meat	—	4	—	—	—	1a.
rolls	13	1	—	—	—	—
Saveloys	5	—	—	—	—	3a.
Semolina	8	—	—	—	—	—
Soft Drink powders . . .	13	—	—	—	—	1c.
Soups, canned	9	1	—	—	—	—
Soup powders	13	—	1	—	—	—
Spaghetti and products . .	3	—	—	—	—	—
Spices	8	2	—	12	—	—
Spirits	8	8	—	—	—	—
Squashes	8	13	—	—	—	2a.
Starches, prepared	21	1	—	2	—	—
*† Steak products	3	—	—	—	—	1a.
Steeping tablets	1	—	—	—	—	—
Suet, shredded	—	3	—	3	—	—
Sugars, various	11	1	—	6	2	—
Sweets	38	23	1	4	—	1a, 2c.
Sweetening tablets	6	—	—	—	—	—
Syrups	1	1	—	—	—	—
Tapioca	—	—	—	3	—	—
Tea	9	4	—	10	—	—
Tomatoes	—	9	—	—	—	—
canned	10	2	4	—	—	—
†Tongue and products . . .	4	—	—	—	—	—
Trifle	—	1	—	—	—	—
Carried Forward	2344	536	213	144	22	203

	Kingston upon Hull	East Riding C.C.	Hull P.H.A.	Haltem-price U.D.C.	Unsatis-Private factory	
Brought Forward	2344	536	213	144	22	203
Tripe and products .	1	—	—	—	—	—
Turkey products .	1	—	—	—	—	—
Vegetables in brine .	—	—	11	—	—	10c.
canned . . .	50	1	1	2	—	1a, 1d.
dried . . .	29	3	—	1	—	—
Vinegars . . .	12	5	—	5	—	2b.
Wheat germ . . .	1	—	—	—	—	—
Wines . . .	8	—	—	—	1	1b.
Yeast . . .	—	—	1	—	—	—
extract . . .	1	—	—	—	—	—
Yoghurt . . .	5	—	—	—	—	—
<i>Drugs</i>						
Liquids . . .	42	10	—	1	—	3a, 1b.
Miscellaneous . .	8	—	—	—	—	—
Ointments/Creams .	3	—	—	—	—	—
Powders . . .	—	1	—	1	—	—
Tablets . . .	—	14	—	—	—	—
Totals :	2505	570	226	154	23	222

NOTE:—†some of the products that could be classified under this heading are classified under one of the products marked*.

Unsatisfactory Samples

- a. Details under Composition of Foods
- b. Details under Food Labelling
- c. Details under Food Additives
- d. Details under Samples containing Extraneous Matter.

